



Hypoallergenic transgenic soybeans

Description of Technology: This invention relates to hypoallergenic transgenic soybeans and, in particular, to the preparation of recombinant expression constructs to lower soybean vacuolar protein, commonly known as P34, as well as other allergens such as Gly m IA, Gly m IB, rGLY m3 and Glycinin G1 (AlaB1b). Such constructs can be used to produce hypoallergenic transgenic soybean plants that in turn can be used to make hypoallergenic soybean products which can be used in a variety of food and feed applications.

Patent Listing:

1. **US Patent No. 6,864,362**, Issued March 8, 2005, "Hypoallergenic transgenic soybeans"
<http://patft.uspto.gov/netacgi/nph-Parser?Sect2=PTO1&Sect2=HITOFF&p=1&u=%2Fnetacgi%2FPTO%2Fsearch-bool.html&r=1&f=G&l=50&d=PALL&RefSrch=yes&Query=PN%2F6864362>

Market Potential: Food allergy is a serious nutritional problem in children and adults. Basically, any food that contains protein has the potential to elicit an allergic reaction in a percentage of the human population. Most food-allergic reactions are attributable to cows' milk, eggs, fish, crustaceans, peanuts, soybeans, tree nuts and wheat. Sometimes referred to as "the Big Eight", it is estimated that these foods or food groups account for more than 90% of all food allergies in the United States. (Taylor et al., (1999) Nutrition Today 34:15-22).

The allergens in foods are almost always naturally occurring proteins. Although foods contain millions of individual proteins, only a comparative few food proteins have been documented as being allergens.

The major human allergen of soybean seeds is a protein designated Gly m Bd 30K also referred to as P34 because this protein has been shown to have an N-terminal amino acid sequence and amino acid composition identical to that of the soybean seed 34 kDa seed vacuolar protein, P34. Thus, the elimination of P34 from soybean seeds, as well as other allergens such as Gly m IA, Gly m IB, rGLY m3 and Glycinin G1 (AlaB1b), by using recombinant technology not only would enhance food safety but it would make the use of soybean products available to sensitive individuals.

Benefits:

- Enhance food safety
- Eliminates allergens from soybeans

Applications:

- Food products

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